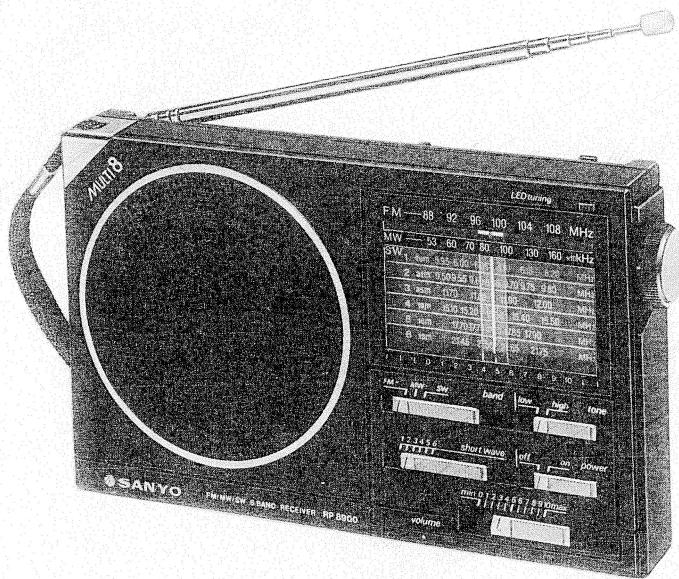


SERVICE MANUAL

PORTABLE RADIO

SANYO

RP8900
(EUROPE)



SPECIFICATIONS

Frequency range:
 FM 87.5 — 108 MHz
 MW 525 — 1605 kHz
 SW1 5.95 — 6.20 MHz
 SW2 9.50 — 9.80 MHz
 SW3 11.70 — 12.00 MHz
 SW4 15.10 — 15.50 MHz
 SW5 17.70 — 17.90 MHz
 SW6 21.45 — 21.75 MHz

Intermediate frequency:
 MW 460 kHz
 FM 10.7 MHz

ICs:
 IC101 AN7213 FM RF Amp &
 MIX
 IC102 AN7223A IF Amp
 IC103 BA526 Power Amp
 Transistor:
 Q101 2SK212F SW RF Amp
 Q102 2SC930E SW MIXER
 Q103 2SC930E SW OSC
 Q104 2SK212F SW Buffer Amp
 Q301 2SC930E FM IF Amp
 Q302 2SC536G Tuning LED Driver
 Q303 2SA608F Tuning LED Driver

Diode:
 D101 GMA01 Electrostatic Protector
 D102 GMA01 Electrostatic Protector
 D103 SD115 FM AFC
 D104 GMA01 Stabilizer
 D105 GMA01 SW AGC
 D106 GMA01 SW AGC
 D107 GMA01 SW AGC
 D108 SLP155B Tuning LED
 D109 GMA01 Electrostatic Protector
 D110 1S2473 Electrostatic Protector

Sensitivity:
 FM 10µV
 MW 280µV/m

SW1 10µV
 SW2 10µV
 SW3 10µV
 SW4 10µV
 SW5 10µV
 SW6 10µV

Power Output:
 Maximum 600mW
 Undistorted 400mW

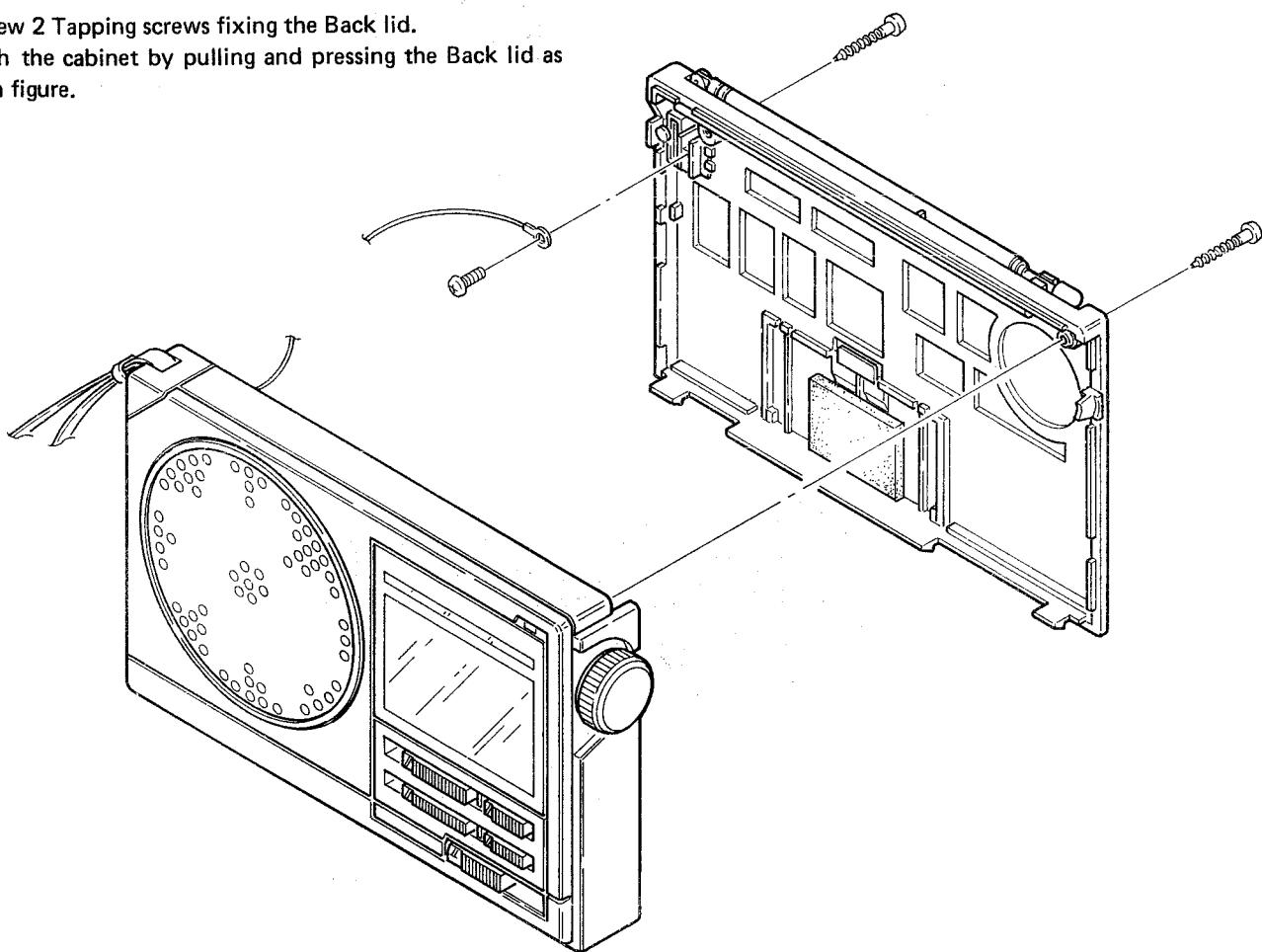
Power Source:
 DC: 6V for UM-3 x 4
 EXT DC IN (150V/230V 6V)

Speaker:
 Dimensions:
 Weight:

7.7cm 8 ohm
 182(W) x 110(H) x 37 (D) mm
 (With out Batteries) 450 g (Approx.)

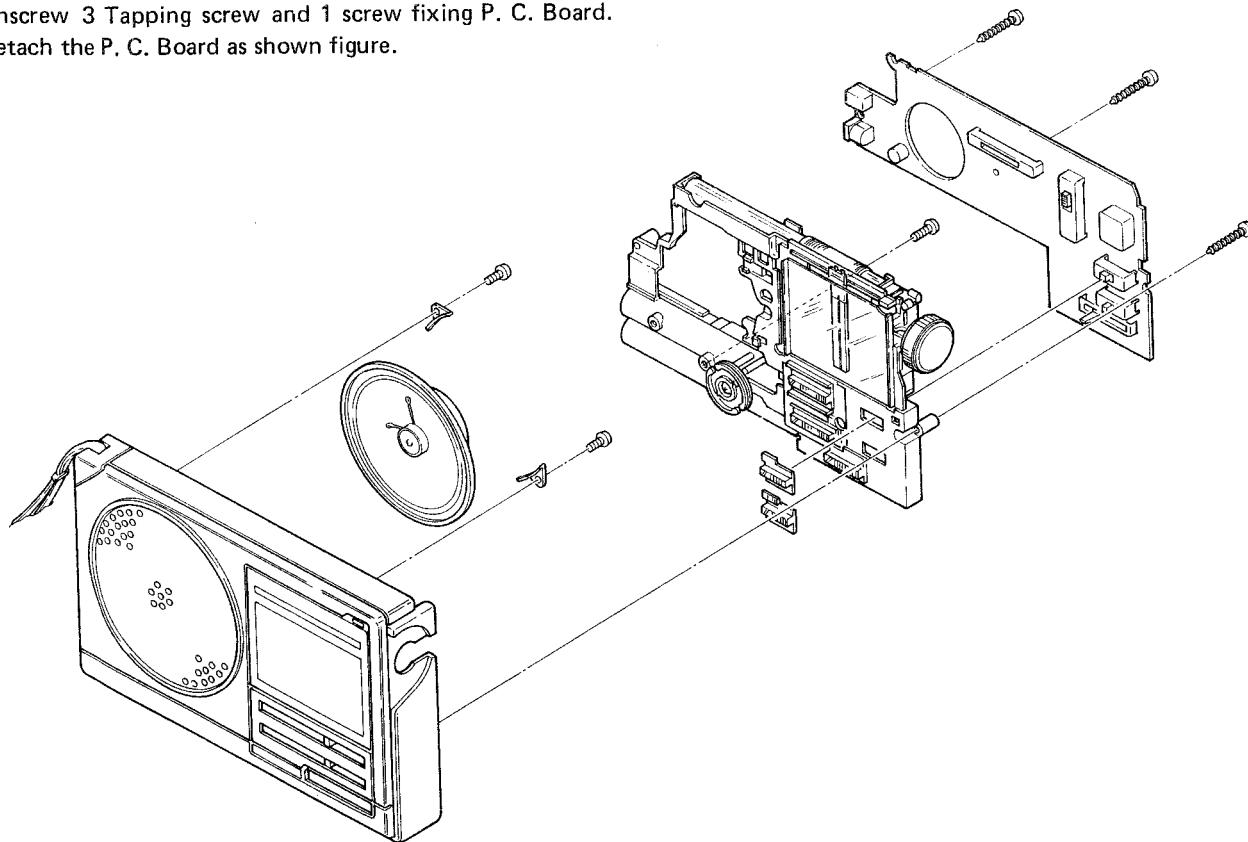
HOW TO DETACH THE CABINET

1. Unscrew 2 Tapping screws fixing the Back lid.
2. Detach the cabinet by pulling and pressing the Back lid as shown figure.



HOW TO DETACH THE PRINTED CIRCUIT BOARD

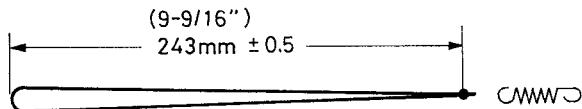
1. Unscrew 3 Tapping screw and 1 screw fixing P. C. Board.
2. Detach the P. C. Board as shown figure.



DIAL ROPE STRINGING

1. Preparation

Bind the rope to the spring coil so that the turnback length becomes $9\frac{9}{16}''$ (243mm).



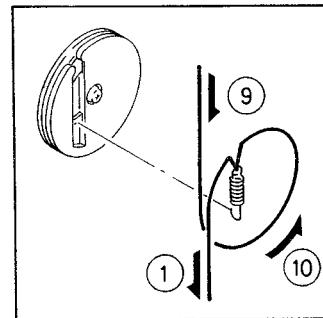
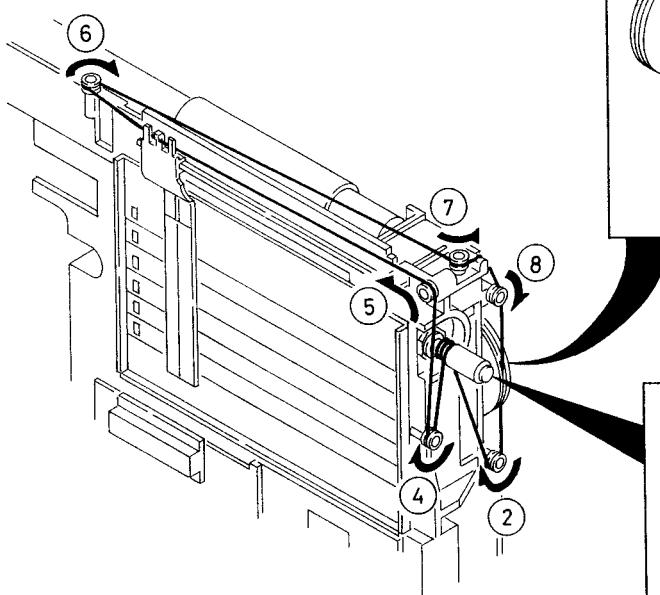
	1 45m	595 6.00
□	2 3m	950 9.55
□	3 2m	170
□	4 1m	510 15.20

2. Procedure

First, hook the spring coil onto the dial drum (1), and from the end of one side the rope, let it pass through (2), (3), (4), (5), (6), (7), and (8).

Next, put the another side of the rope around the drum (9) as shown figure.

Finally, put the rope at position (10).

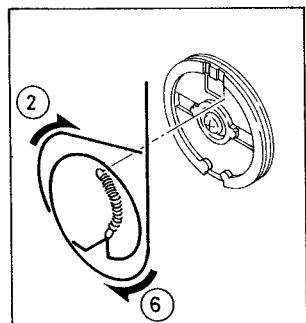


(3)	5 - TURN
	↓

HOW TO STRING DIAL ROPE FOR SHORT WAVE INDICATION

1. Preparation

Bind the rope to the spring coil so that the turnback length becomes $6\frac{3}{64}''$ (154mm).

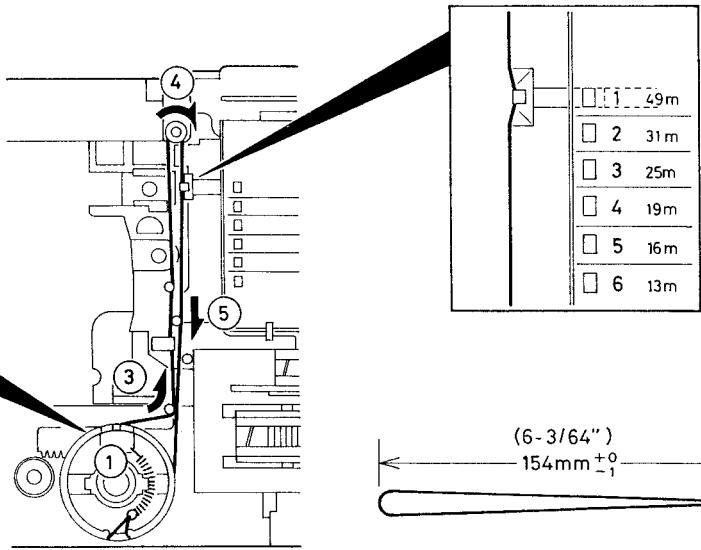


2. Procedure

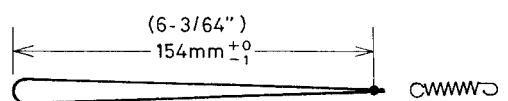
First, hook the spring coil onto the dial drum (1), and from the end of one side the rope, let it pass through (2), (3), and (4).

Next, put the another side of the rope around the drum (5) as shown figure.

Finally, put the rope at position (6).



	1 49m
□	2 31m
□	3 25m
□	4 19m
□	5 16m
□	6 13m



ALIGNMENT PROCEDURES

GENERAL ALIGNMENT CONDITIONS

1. The position of volume control is at maximum position.
2. Signal input must be kept as low as possible to avoid overload.
3. Use an output meter of the highest possible sensitivity.
4. Standard modulation is 1 KHz at 30% amplitude (for AM) and 22.5 kHz deviation (for FM).

MW BAND — Band selector switch in MW position

Step	Connection of Signal Gen.	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Loop Antenna	460 kHz	Lowest End	Across Speaker	IFT T302	Adjust for Maximum
2	Same	517 kHz	Lowest End	Same	Osc. Coil L104	Same
3	Same	1650 kHz	Highest End	Same	Osc. Trim. VCT2	Same
4	Same	600 kHz	600 kHz	Same	Ant. Coil L103	Same
5	Same	1400 kHz	1400 kHz	Same	Ant. Trim. VCT1	Same

Repeat steps 1 thru 5 to obtain maximum sensitivity.

FM BAND — Band selector switch in FM position

Step	Connection of Signal Gen.	Input Signal Frequency	Dial Setting of Radio	Connection of Meter or Oscilloscope	Adjust	Remarks
1	Connect Sweep Marker Generator to (H) TP1, (E) TP2.	10.7 MHz	Lowest End	Connect scope Input cable thru network to (H) TP3, (E) TP4	IFT, T301	Adjust for Maximum sensitivity with symmetrical curve
2	Same	10.7 MHz	Lowest End	Connect scope Input cable thru network to (H) TP3, (E) TP4	IFT T303	Adjust for symmetrical "S" curve
3	Connect Signal Generator to (H) TP1, (E) TP2.	87.35 ± 0.15 MHz	Lowest End	Connect V. T. V. M. across speaker	Osc. Coil L102	Adjust for Maximum
4	Same	108.5 ± 0.3 MHz	Highest End	Same	Osc. Trim. CT-2	Same
5	Same	90 MHz	90 MHz	Same	RF Coil L101	Same
6	Same	106 MHz	106 MHz	Same	RF Trim. VCT3	Same

Repeat steps 1 thru 6 to obtain maximum sensitivity.

SW1 BAND — Band selector switch in SW1 position

Step	Connection of Signal Gen.	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Dummy Antenna	5.930 MHz	Lowest End	Across Speaker	Osc. Coil L113	Adjust for Maximum
2	Same	6.230 MHz	Highest End	Same	Osc. Trim. CT1	Same
3	Same	6.075 MHz	6.075 MHz	Same	Ant. Coil L105	Same

Repeat steps 1 thru 3 to obtain maximum sensitivity.

SW2 BAND — Band selector switch in SW2 position

Step	Connection of Signal Gen.	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Dummy Antenna	9.650 MHz	Center	Same	Osc. Coil L114	Adjust for Maximum
2	Same	9.650 MHz	9.650 MHz	Same	Ant. Coi. L106	Same

ALIGNMENT PROCEDURES

SW3 BAND — Band selector switch in SW3 position

Step	Connection of Signal Gen.	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Dummy Antenna	11.850 MHz	Center	Across Speaker	Osc. Coil L115	Adjust for Maximum
2	Same	11.850 MHz	11.850 MHz	Same	Ant. Coil L107	Same

SW4 BAND — Band selector switch in SW4 position

Step	Connection of Signal Gen.	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Dummy Antenna	15.300 MHz	Center	Same	Osc. Coil L116	Adjust for Maximum
2	Same	15.300 MHz	15.300 MHz	Same	Ant. Coil L108	Same

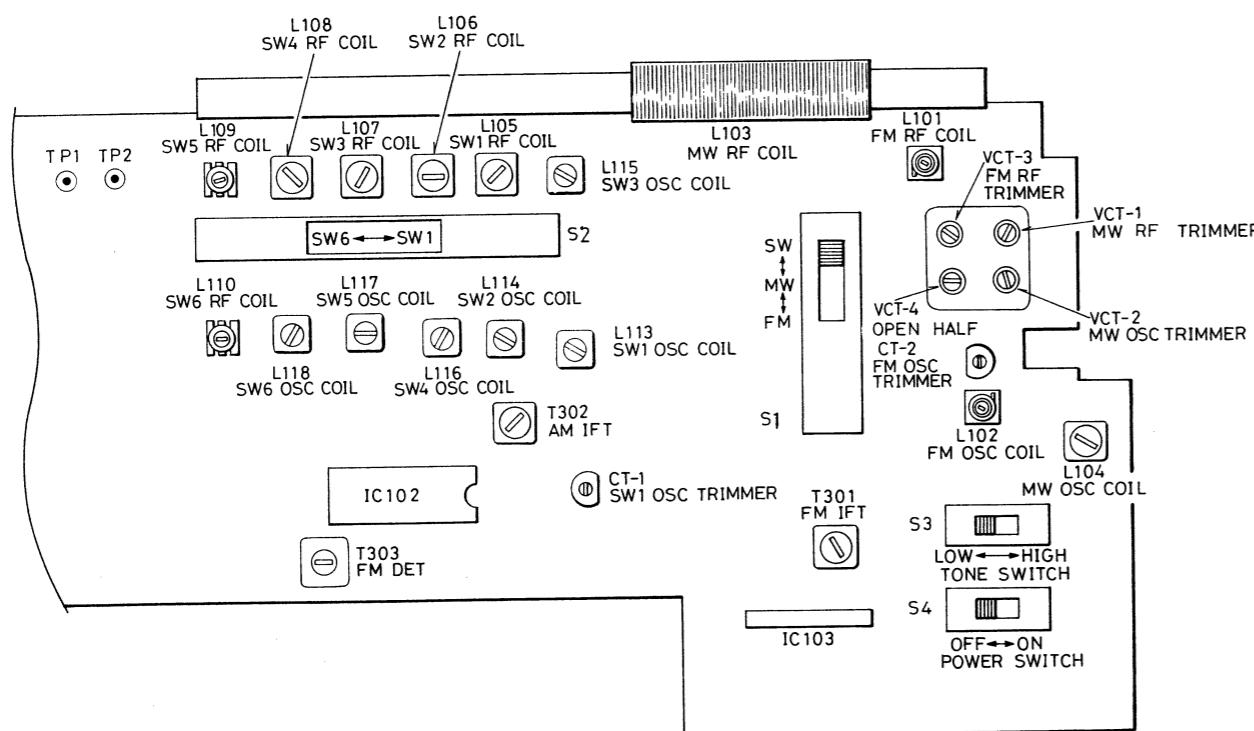
SW5 BAND — Band selector switch in SW5 position

Step	Connection of Signal Gen.	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Dummy Antenna	17.800 MHz	Center	Across Speaker	Osc. Coil L117	Adjust for Maximum
2	Same	17.800 MHz	17.800 MHz	Same	Ant. Coil L109	Same

SW6 BAND — Band selector switch in SW6 position

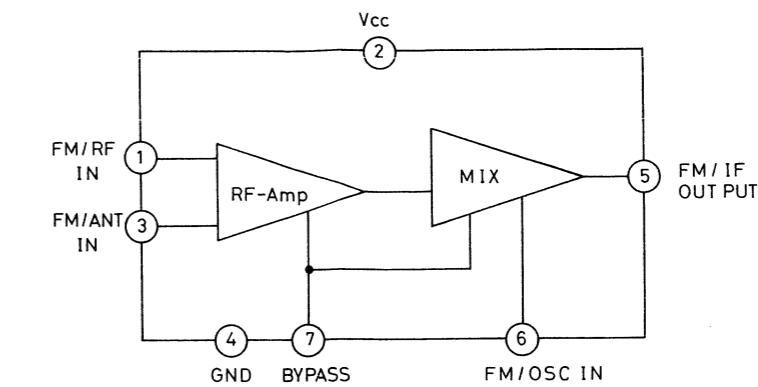
Step	Connection of Signal Gen.	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Dummy Antenna	21.600 MHz	Center	Same	Osc. Coil L118	Adjust for Maximum
2	Same	21.600 MHz	21.600 MHz	Same	Ant. Coil L110	Same

PART LOCATION

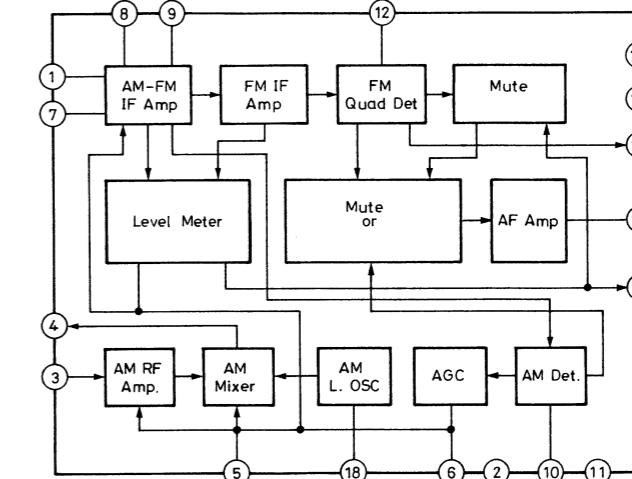


IC BLOCK DIAGRAM

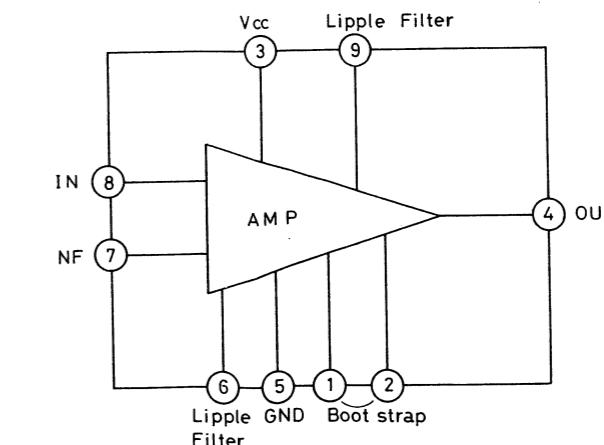
AN 7213 (FM RF Amp & MIX)



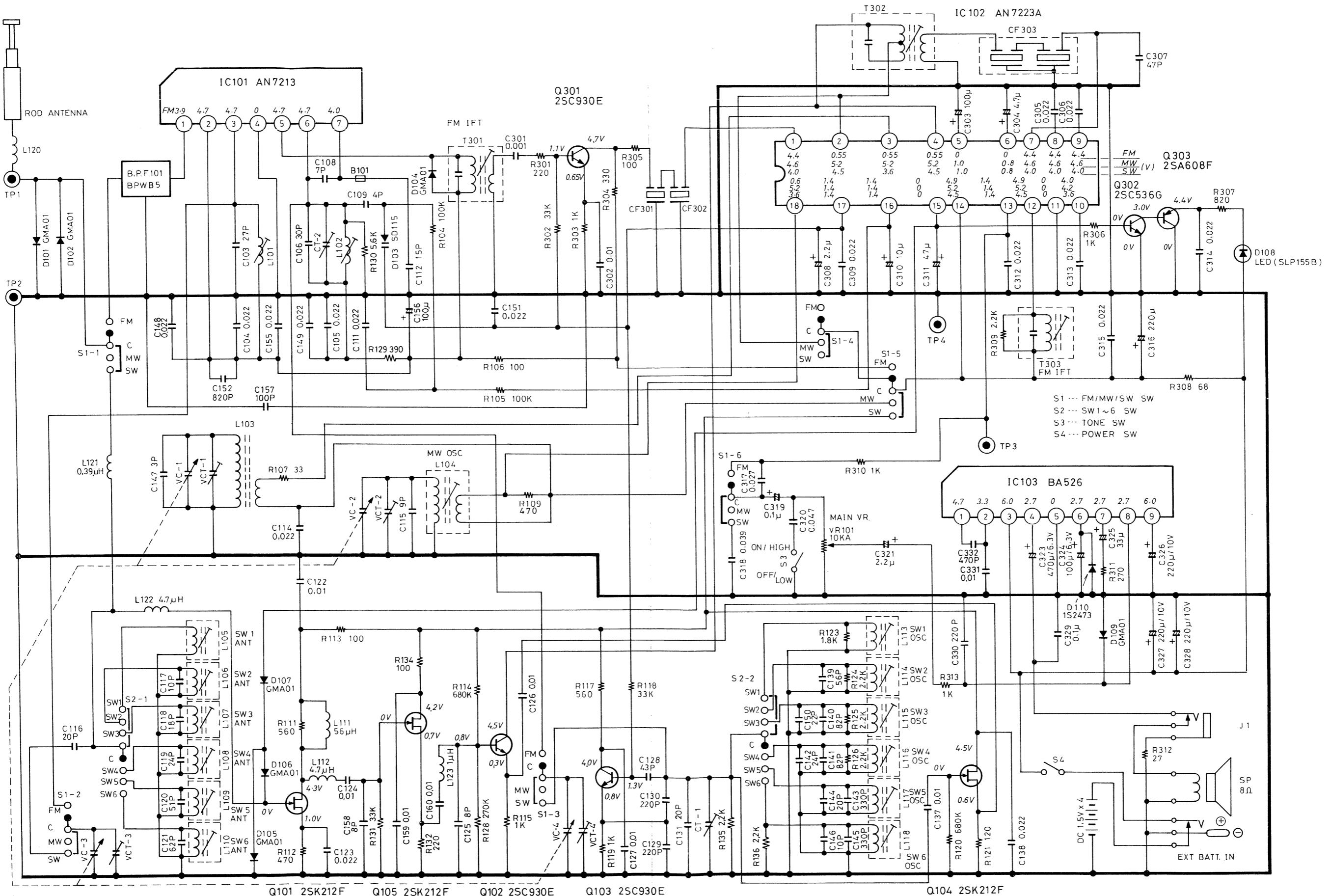
AN7223A (AM-Tuner & FM / AM IF System)



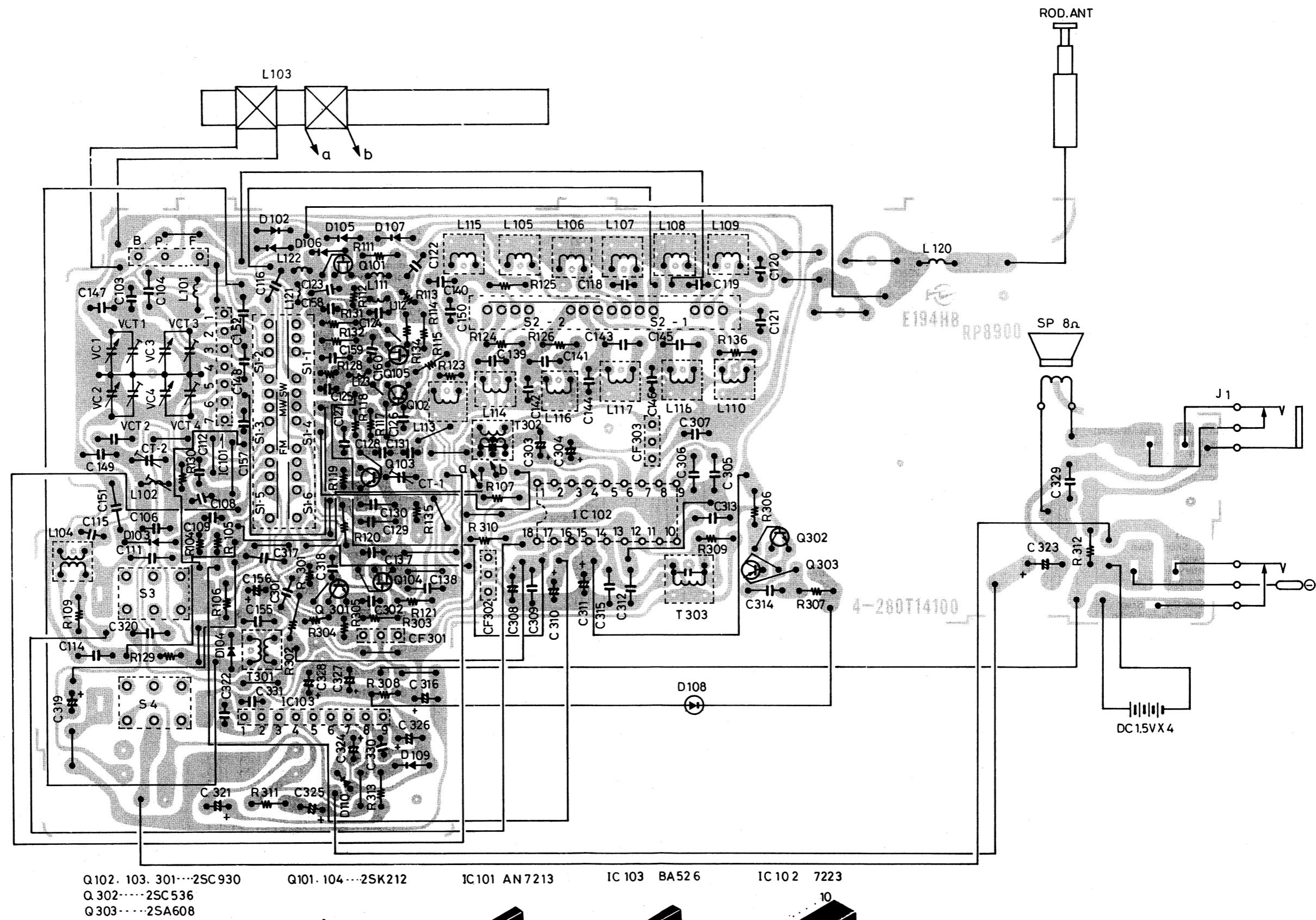
BA 526 (Power Amplifier)



SCHEMATIC DIAGRAM



WIRING DIAGRAM



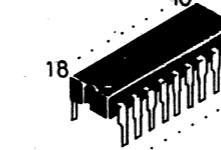
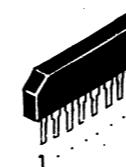
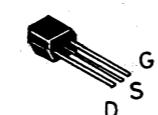
Q 102. 103. 301---2SC 930
Q 302----2SC 536
Q 303----2SA608

Q101. 104 ... 2SK21

IC101 AN721

IC 103 BA52

IC 102 722



PARTS LIST

Key. No.	Part No.	Description	Q'ty
PACKING			
	141-6-141T-19002	Display Carton	1
	141-6-144T-90000	Foam Plastic Case, Left	1
	141-6-144T-90100	Foam Plastic Case, Right	1
	141-6-410T-92202	Instruction Manual	1
	141-6-231T-15305	Inner Polye Cover, Set	1
	141-2-181T-14700	Case	1
CABINET & CHASSIS			
	141-0-111T-55702	Cabinet Ass'y	1
	141-0-126T-42402	Back Lid Ass'y	1
	141-0-128T-20200	Battery Lid Ass'y	1
	141-2-372T-04400	Bracket Speaker	2
	141-2-732T-13200	Slide, Rod Antenna	1
	141-2-661T-37200	Pulley, Rod Antenna	1
	123-2-472R-00401	Lug, Rod Antenna	1
	141-0-163T-94400	Rotary Knob Ass'y, Tuner	1
	141-0-311T-44400	Chassis Ass'y	1
	141-0-566T-14000	Tuning Shaft Ass'y	1
	141-2-538T-14700	Drum	1
	141-2-511T-25900	Pointer	1
	141-0-661T-35200	Pulley Ass'y	7
	141-2-340T-02530	Dial Scale	1
	141-2-856T-20300	Rope	1
	141-2-164T-32100	Spring Coil, Rope	1
	141-2-164T-32200	Slide Knob, Power & Tone	2
	141-2-164T-32300	Slide Knob, Band Switch	2
	141-2-732T-13300	Slide Knob, Volume	1
	141-2-742T-99100	Slide, Band Switch (FM-MW-SW)	1
	141-2-245T-13100	Lever, Band Switch (FM-MW-SW)	1
	141-2-732T-13400	Back Plate, Band Swith (FM-MW-SW)	1
	141-2-538T-14800	Slide, Short Wave	1
	141-2-511T-26000	Drum, Short Wave	1
	141-2-340T-02530	Pointer, Short Wave	1
	141-2-856T-20400	Rope, Short Wave	1
	141-2-742T-99200	Spring Coil, Short Wave	1
	141-2-732T-13500	Lever, Short Wave	1
	141-0-210T-45500	Slide, Short Wave	1
	141-2-241T-26000	Bracket Ass'y, Short Wave	1
	141-2-336T-20100	Veil, Band Switch	1
	141-2-336T-25400	Terminal Battery, (+)	1
	141-2-336T-24900	Terminal Battery, (-)	1
	141-2-345T-00100	Terminal Battery, (-)	1
	141-2-856T-20500	Steel Ball, Band Switch Step	2
	141-2-157T-37800	Spring Coil, Band Switch Step	2
	141-2-327T-30100	Inlay, Power Slide Knob	1
	141-2-327T-30400	Insulator, Shield Plate	1
		Insulator, Shield Plate	1
FIXING PARTS			
	141-2-457T-20000	Pan. Hd. Tapping Screw 3 x 8mm, Speaker	2
		Special Washer, Badge	2
		Pan. Hd. Screw 3 x 6mm	1
		Rod Antenna	
		Pan. Hd. Tapping Screw 3 x 20mm, Chassis-Cabinet	3
		Pan. Hd. Tapping Screw 3 x 8mm, Chassis-Cabinet	1
		Pan. Hd. Tapping Screw 3 x 25mm, Back Lid	2
		Pan. Hd. 3 Special Screw 1.7 x 3mm, Dram	1
		Pan. Hd. Tapping Screw 3 x 8mm, Chassis-PCB	1
		Hexagon Nut 3φ, Tuning Shaft Ass'y	1
		Screw, W/Washer and Spring Washer, 2.6 x 6mm, Lever-Shaft	1
		Binding Hd. Screw 2.6 x 4mm	1
		Bracket Ass'y	
		Pan. Hd. Tapping Screw W/Washer, 3 x 8mm, Dram	1

Key. No.	Part No.	Description	Q'ty
ELECTRICAL PARTS			
	4-244T-06500	Rod Antenna	1
	4-151T-44100	Speaker	1
	123-2-472R-00401	Lug	1
	4-152T-03101	Earphone	1
TUNER P. C. B. ASS'Y			
S3,4	141-4-280T-14100	P. C. Board Ass'y	1
SW1-6, S2	4-231T-81500	Slide Switch, Tone, Power	2
S1	4-238T-61700	Switch	1
VR101	4-220T-07400	Switch, FM/MW/SW	1
	4-235T-86100	Variable Resistor, 10K ohm	1
	4-240T-27800	Socket, Earphone	1
TP1,2	4-237T-00171	Terminal Board	2
	141-2-322T-79800	Shield Plate, SW Coil	1
	141-2-322T-79900	Shield Plate, IC	1
	141-2-322T-80300	Shield Plate	1
B101	141-2-322T-80700	Shield Plate	1
	123-2-471R-10900	Core	1
BPF101	4-224T-22600	Variable Capacitor	1
L101	4-253T-13471	Filter	1
L102	4-265T-59630	V. H. F Coil	1
L103	4-257T-54100	V. H. F Coil	1
L104	4-258T-44610	Antenna Coil	1
L105	4-257T-59040	O. S. C Coil	1
L106	4-257T-53640	Antenna Coil	1
L107	4-257T-53740	Antenna Coil	1
L108	4-257T-53840	Antenna Coil	1
L109	4-257T-53940	Antenna Coil	1
L110	4-257T-54040	Antenna Coil	1
L111	4-252T-03910	Choke	1
L112,122	4-253T-04816	Filter	1
L121	4-253T-14803	Filter	1
L123	4-253T-14808	Filter	1
L113	4-258T-45840	O. S. C Coil	1
L114	4-258T-41440	O. S. C Coil	1
L115	4-258T-41540	O. S. C Coil	1
L116	4-258T-41640	O. S. C Coil	1
L117	4-258T-41740	O. S. C Coil	1
L118	4-258T-41840	O. S. C Coil	1
L120	4-265R-12500	V H F Coil	1
CT1	4-224T-15471	Trimmer, 30p	1
CT2	4-224T-15571	Trimmer, 11p	1
CF301,302	4-256T-80400	I. F. Filter 10.7M, Red	
	4-256T-80471	I. F. Filter 10.67M, Blue	
	4-256T-80472	I. F. Filter 10.73M, Orange	
	4-256T-80473	I. F. Filter 10.64M, Black	
	4-256T-80474	I. F. Filter 10.76M, White	
	4-256T-83371	I. F. Filter (468 kHz)	1
	4-256T-26940	I. F. T	1
T301	4-256T-29610	I. F. T	1
T302	4-256T-26810	I. F. T	1
IC101	IC AN7213	IC AN7223A	1
IC102	IC BA526	Transistor, 2SK212 F1	3
Q101,104,	Q105	Transistor, 2SC536 AUD	1
	Q302	Transistor, 2SA608	1
	Q303	Transistor 2SC930 IF	1
	Q301	Transistor 2SC930 E1 CONV	2
Q102,103	D108	LED SLP155B Red	1
	D103	Varactor Diode SD115	1
	D101,102,	Diode GMA01	6
	104,105,		
	106,107		
D109	D110	Diode GMA01	1
		Diode 1S2473	1
RESISTORS			
All Resistors are Carbon T-type ±5% 1/6W, unless otherwise noted.			
	R106,134	100 ohm	2
	R107	33 ohm	1
	R109	470 ohm	1
	R111,117	560 ohm	2
	R112	470 ohm	1
	R114,120	680K ohm	2
	R119	1K ohm	1

PARTS LIST

Key. No.	Part No.	Description	Q'ty
TUNER P. C. B. ASS'Y			
R303,306, 310	RESISTORS	All Resistors are Carbon T-type ±5% 1/6W, unless otherwise noted.	
R118	1K ohm		3
R131	33K ohm		1
R129	33K ohm		1
R130	390 ohm		1
R124,125, 126,135	5.6K ohm		1
R309,136	2.2K ohm		4
R121	2.2K ohm		2
R307	120 ohm		1
R312	820 ohm		1
R313	27 ohm		1
R128	1K ohm P-type		1
R104,105	270 ohm		1
R115	270K ohm V-type		1
R123	100K ohm V-type, ¼W		2
R305,104, 105,113	1K ohm V-type ¼W		1
R302,118	1.8K ohm V-type ¼W		1
R304	100 ohm V-type ¼W		4
R308	33K ohm V-type ¼W		1
R127	330 ohm V-type ¼W		1
R301,132	68 ohm V-type ¼W		1
	56K ohm V-type ¼W		1
	220 ohm V-type ¼W		2
CAPACITORS			
C326,327, 328,316	Capacitor 220μF 10V		4
C304	Electrolytic 4.7μF 50V		1